

Super-Penrose process due to collisions inside ergosphere

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Abstract

© 2017 World Scientific Publishing Company. If two particles collide inside the ergosphere, the energy in the center of mass frame can be made unbound provided at least one of particles has a large negative angular momentum [A. A. Grib and Yu. V. Pavlov, Europhys. Lett. 101 (2013) 20004]. We show that the same condition can give rise to unbounded Killing energy of debris at infinity, i.e. super-Penrose process. Proximity of the point of collision to the black hole horizon is not required.

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Keywords

acceleration of particles, center of mass, Particle collision

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